

REMARKS

Claims 3 and 11 – 12 have been canceled. Claims 1, 10, and 16 have been amended. Claims 1, 2, 4 – 10, and 13 – 20 are pending in this Application. Reconsideration and further examination is respectfully requested.

Claim Rejections – 35 USC § 103

1. Claims 1, 3, 7, 10 – 13 & 16 – 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman (U.S. Patent Publication #20040179518), in view of Sandstrom (U.S. Patent Publication # 6697373). This rejection is respectfully traversed.

Claim 1 as amended recites:

“A method of adaptively managing bandwidth among a plurality of services contending for bandwidth on an optical link having a bandwidth capacity, the method comprising:

allocating bandwidth to each service contending for bandwidth of the optical link;

computing for each service a utilization metric representing a measure of current usage of a maximum allowed bandwidth for that service;

computing for each service a current utilization metric representing a measure of current usage of the allocated bandwidth by that service; and

allocating additional bandwidth to one of the services in response to the current utilization metric of that service if bandwidth usage of the optical link is currently at less than full capacity, otherwise balancing the bandwidth allocation between the services in response to the current utilization metric of at least one of the services if the bandwidth usage of the optical link is currently at full capacity, such that the utilization metrics of the services are made approximately equal to each other.”

Thus Applicants' invention uses two metrics – one, a utilization metric representing a measure of current usage of maximum allowed bandwidth for a service; and the other, a current utilization metric representing a measure of current usage of allocated bandwidth for that service. Additional bandwidth is allocated to a service in response to the current utilization metric unless the link is at full capacity, otherwise bandwidth is balanced between the services such that the utilization metrics are made approximately equal. Note that the utilization metrics are based on maximum allowed bandwidth for a service – which is not necessarily equal for each service.

In order to establish a *prima facie* case of obviousness, one of the several criteria that must be met is that the prior art reference (or references when combined) must teach or suggest all the claim limitations. The Applicants respectfully assert Sandstrom and Bruckman, taken either together or in part, fail to teach or suggest the Applicant's claimed invention.

The Office Action cites Bruckman simply for the known teaching of using LCAS as bandwidth allocation technology. The Office Action then compares Sandstrom's measuring of traffic flows to the claimed "current utilization metric" (OA page 4 1<sup>st</sup> par. Referring to Sandstrom Col. 5 lines 63-67), and then suggests that Sandstrom's same measuring of traffic flow is a "utilization metric" (OA page 5 1<sup>st</sup> par. Referring to Sandstrom Col. 5 lines 63 – 67). The Office Action refers to the usage of the term "target capacity" in Sandstrom as a measure of current usage of maximum bandwidth allowed. The Applicants disagree.

In Bruckman, a single metric is used – one based on measuring volumes of traffic flows. In Bruckman, the "target capacity" is arrived at from this measurement. There is no suggestion in Bruckman that any other metric is used. During overcapacity in Bruckman (Col. 9), there is no suggestion that any maximum bandwidth per service is taken into account in order to balance the flows. Thus Bruckman cannot allocate bandwidth based on one metric related to current

bandwidth utilization, and at the same time balance overcapacity by using a different utilization metric based on a maximum allowed bandwidth for a service. Sandstrom makes no teaching at all of utilization metrics, so there is no way to combine Bruckman and Sandstrom in any way that would teach or suggest the use of a current utilization metric for allocating additional bandwidth, and another utilization method representing a measure of current usage of a maximum allowed bandwidth for balancing bandwidth allocation when a link is at full capacity, as the Applicants have claimed.

The Applicants therefore respectfully assert that Sandstrom and Bruckman, taken together or in part, fail to teach or suggest the Applicant's claimed invention, and that the rejection of Claim 1 be withdrawn. Independent Claims 10 and 16 contain limitations similar to those of Claim 1 and are believed allowable for the same reasons. The Applicants therefore respectfully request that Claim 1, its dependent claim 7, Claim 10, its dependent claim 13, and Claim 16 and its dependent Claims 17-18 be placed in condition for allowance.

2. Claims 2, 4, 9, 15 & 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman in view of Sandstrom and further in view of Branstad (US 6,498,782). This rejection is respectfully traversed.

Claims 2 and 4 are dependent on Claim 1. Claim 15 is dependent on Claim 10. Claim 20 is dependent on Claim 16. As previously set forth, Bruckman and Sandstorm fail to teach or suggest all the elements set forth in independent Claims 1, 10, and 16. Branstad adds nothing further that would solve the deficiencies of Bruckman and Sandstorm. The Applicant therefore respectfully requests that claims 2, 4, 9, 15, and 20 be placed in condition for allowance.

3. Claims 6 and 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman in view of Sandstrom and further in view of Aimoto et al. (US 6,144,636). This rejection is respectfully traversed.

Claims 6 and 8 are dependent on Claim 1. As previously set forth, Bruckman and Sandstorm fail to teach or suggest all the elements set forth in independent Claim 1. Aimoto adds nothing further that would solve the deficiencies of Bruckman and Sandstorm. The Applicant therefore respectfully requests that claims 6 and 8 be placed in condition for allowance.

4. Claim 19 was rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman in view of Sandstrom and further in view of Montgomery, JR (US Pub. #2004005745). This rejection is respectfully traversed.

Claim 19 is dependent on Claim 16. As previously set forth, Bruckman and Sandstrom fail to teach or suggest all the elements set forth in independent Claim 16. Montgomery, JR adds nothing further that would solve the deficiencies of Bruckman and Sandstrom. The Applicant therefore respectfully requests that claim 19 be placed in condition for allowance.

5. Claims 5 and 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman in view of Sandstrom, and in view of Branstad and further in view of Aimoto. This rejection is respectfully traversed.

Claim 5 is dependent on Claim 1. Claim 14 is dependent on Claim 10. As previously set forth, Bruckman and Sandstrom fail to teach or suggest all the elements set forth in independent Claims 1 and 10. Branstad and Aimoto add nothing further that would solve the deficiencies of

Bruckman and Sandstorm. The Applicant therefore respectfully requests that claims 5 and 14 be placed in condition for allowance.

CONCLUSION

In view of the amendments and arguments made herein, Applicants submit that the application is in condition for allowance and request early favorable action by the Examiner.

If the Examiner believes that a telephone conversation with the Applicants' representative would expedite allowance of this application, the Examiner is cordially invited to call the undersigned at (508) 303-2003.

Respectfully submitted,

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